



Managing an Advanced Geophysical Classification Project

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Objective



- Provide a synopsis of the key features of an Advanced Geophysical Classification (AGC) project to support effective scoping and management by Remedial Project Managers (RPMs)
 - Identify AGC project delivery team and interactions between them
 - Government, AGC Contractor, Construction Contractor, QA Contractor
 - Describe a typical AGC project sequence for a munitions response (MR) project
 - Highlight differences between an AGC and a conventional Digital Geophysical Mapping (DGM) project
- Breakdown complex AGC process into simplified parts
 - Provide takeaways RPMs should consider during each parts

AGC Project Delivery Team



- AGC project delivery team consists of:
 - NAVFAC RPM
 - Base Environmental Restoration (ER) Manager
 - AGC Contractor
 - Tasked with all AGC related items
 - e.g., Navy CLEAN contractor
 - Construction Contractor
 - Tasked with all remedial/removal action items
 - e.g., Navy RAC contractor
 - Quality Assurance (QA) Contractor
 - Tasked with AGC QA function for the government
 - e.g., NSWC Indian Head EODTECHDIV
 - Other stakeholders
 - Tasked with supporting project implementation and acceptance
 - e.g., regulators, tenants

AGC Project Delivery Team



- AGC project delivery team consists of:

- NAVFAC RPM

- Base Env

- AGC Con

- Tas

- e.g.

- Construc

- Tas

- e.g.

- Quality A

- Tas

- e.g.

- Other stakeholders

- Tasked with supporting project implementation and acceptance

- e.g., regulators, tenants

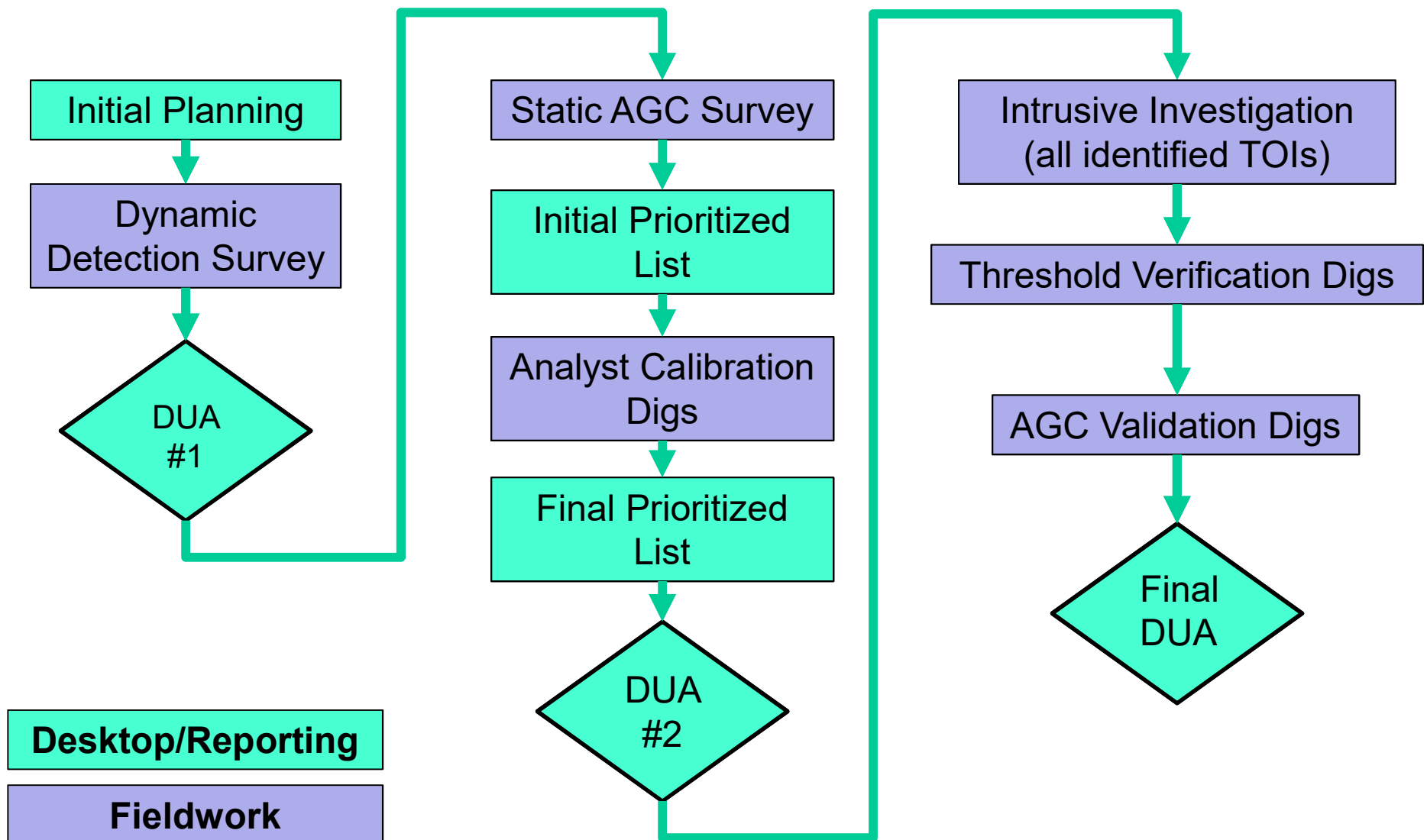
****RPM Takeaways****

- Plan for increased contracting effort needed for AGC projects

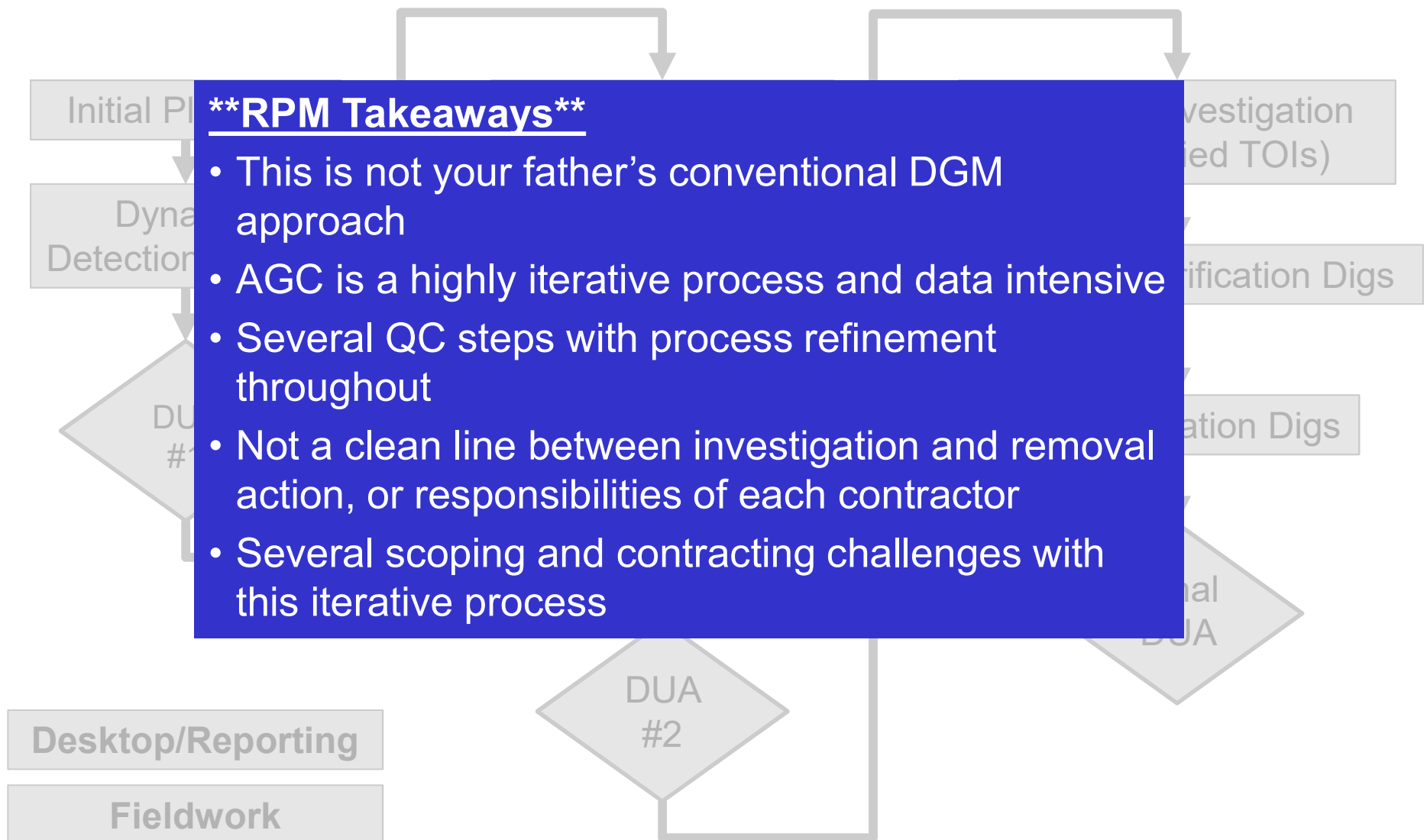
- Ideally, the entire project delivery team should be involved from beginning to end of project

- Scope for Construction Contractor should be written with options given the award is done before full project breadth is understood

Typical AGC Project Sequence



Typical AGC Project Sequence

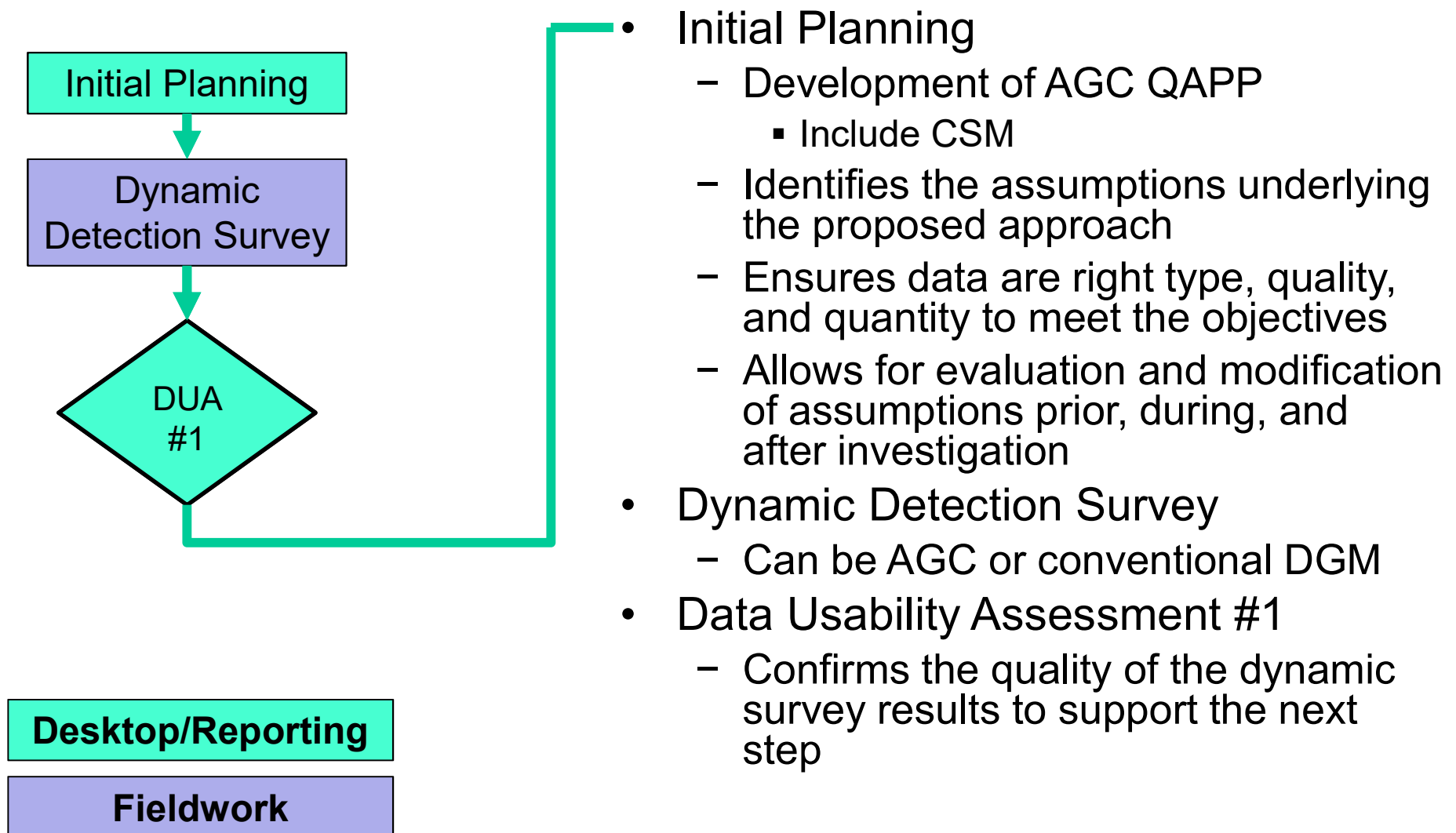


Knowledge Check

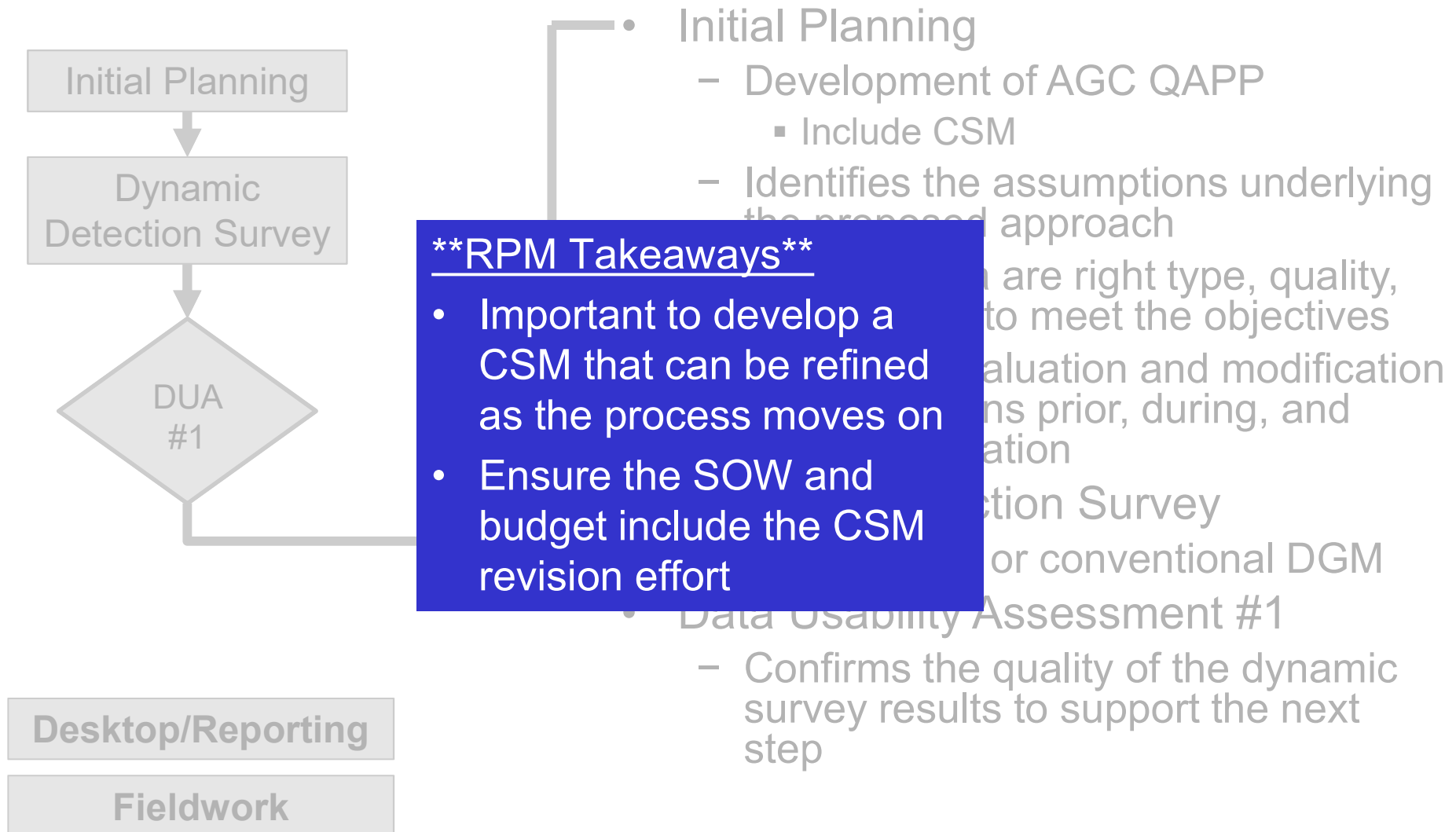


- **True or False:** An AGC project should be implemented in the same way as a conventional DGM project?
- **Answer:** False! The iterative nature of the AGC process as presented in the project sequence requires additional scoping/contracting considerations and enhanced coordination between the project team members (most notably the AGC Contractor and Construction Contractor)

Breakdown of AGC Process: Part 1



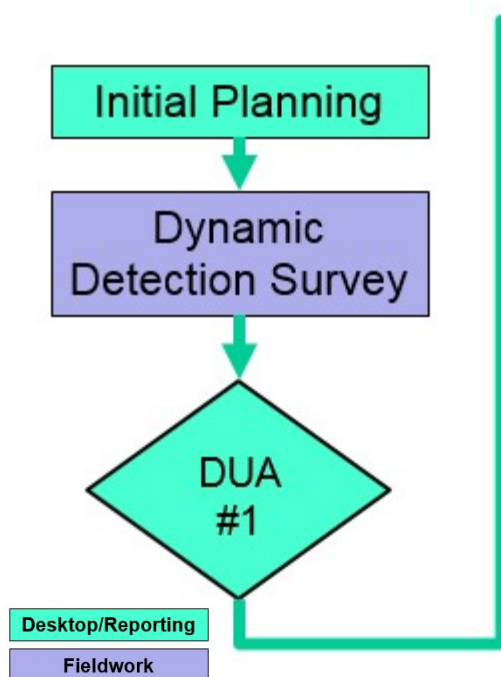
Breakdown of AGC Process: Part 1



Breakdown of AGC Process: Part 1

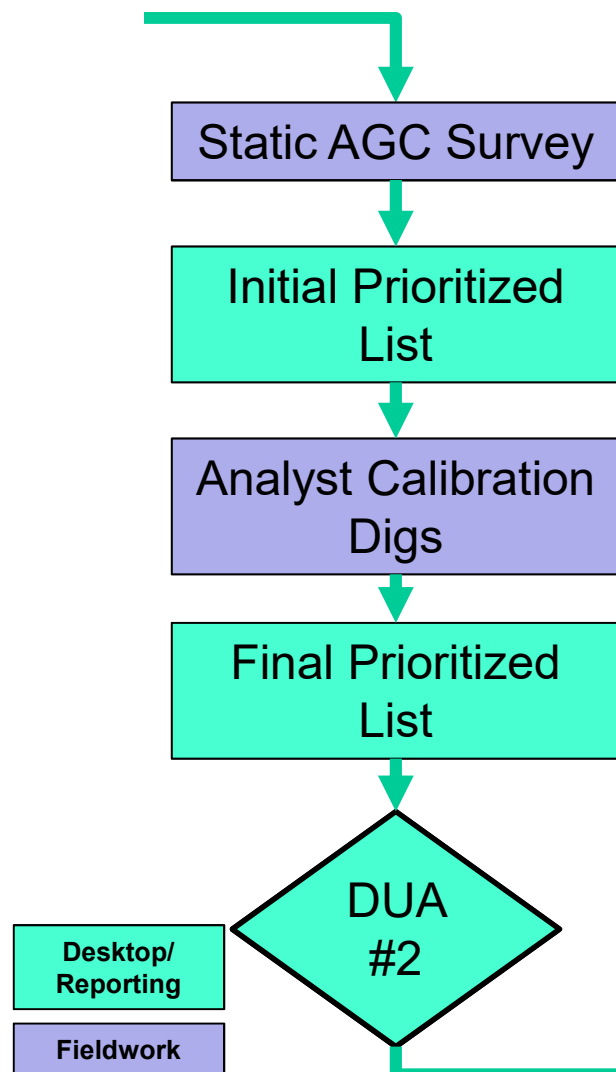


Sequence Step vs. Project Delivery Team Member Engagement	NAVFAC RPM	Base ER Manager	AGC Contractor	Construction Contractor	Quality Assurance Contractor
Initial Planning	Heavy	Heavy	Heavy	Light	Light
Dynamic Detection Survey	Light	Light	Heavy	None	Medium
Data Usability Assessment #1	Medium	Medium	Heavy	Light	Light



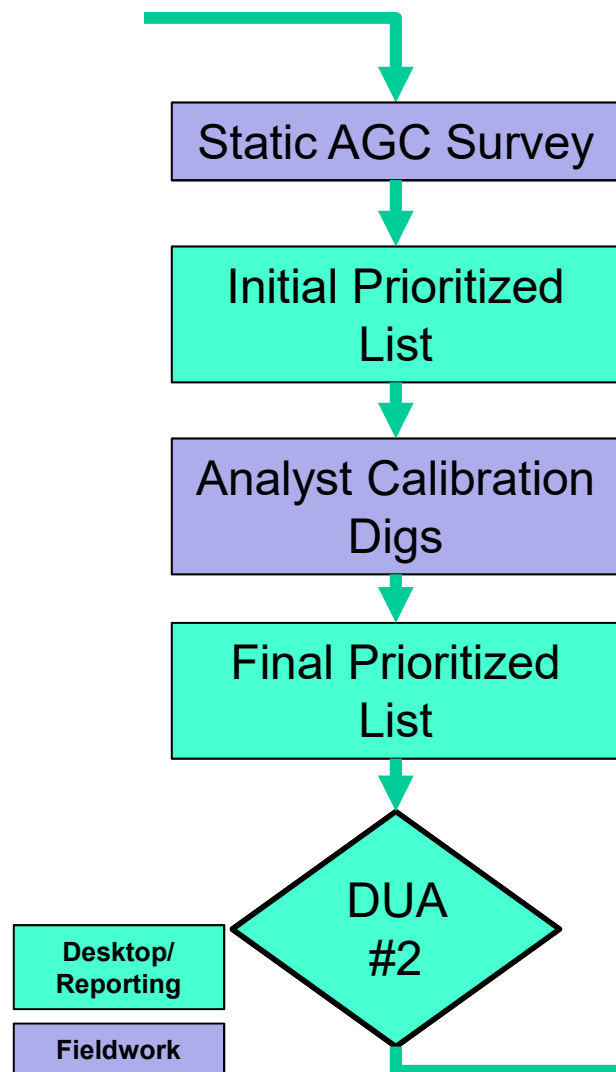
- Project Delivery Team for Part 1
 - Involves interactions between all team members
 - All parties are engaged in AGC QAPP via reviews and input
 - Endorsement of Data Usability Assessment #1 required to move on to next step
 - NAVFAC RPM, Base ER Manager, QA Contractor, and Stakeholders

Breakdown of AGC Process: Part 2



- Static AGC Survey
 - To obtain AGC signatures of all targets identified in dynamic detection survey
- Initial Prioritized List
 - Targets prioritized based on signature comparison to site-specific library of munitions items
 - Initial estimate of intrusive targets
 - NOT an actionable dig list
- Analyst Calibration Digs
 - Small number of digs (~50-100)
 - Refines site-specific library
 - Used to determine dig/no dig cutoff threshold

Breakdown of AGC Process: Part 2



- Final Prioritized List
 - Dig/no dig cutoff threshold refined
 - Actionable dig list generated
- Data Usability Assessment #2
 - Provides initial validation of AGC process and results
 - Evaluates data quality against Measurement Quality Objectives
 - Confirms process performance sufficient to allow AGC to be used at the site

Breakdown of AGC Process: Part 2



- Final Prioritized List
 - Dig/no dig cutoff threshold refined

RPM Takeaways

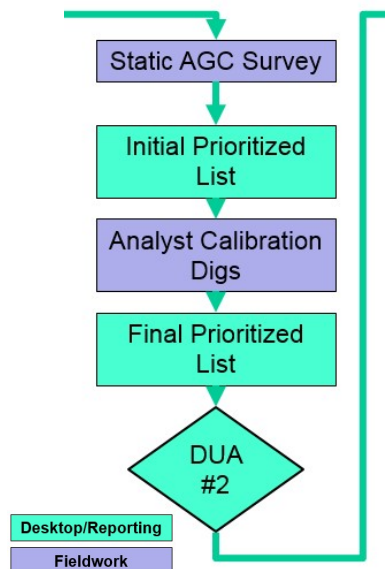
- MEC QAPP development should begin at this time when the uncertainties are reduced; suggested around the 'Finalized Prioritized List' and 'Data Usability Assessment #2' steps
- AGC digs require increased level of documentation versus conventional digs
- Documentation must be accurate
- Ensure SOW and budget include increased documentation and data management requirements



Breakdown of AGC Process: Part 2

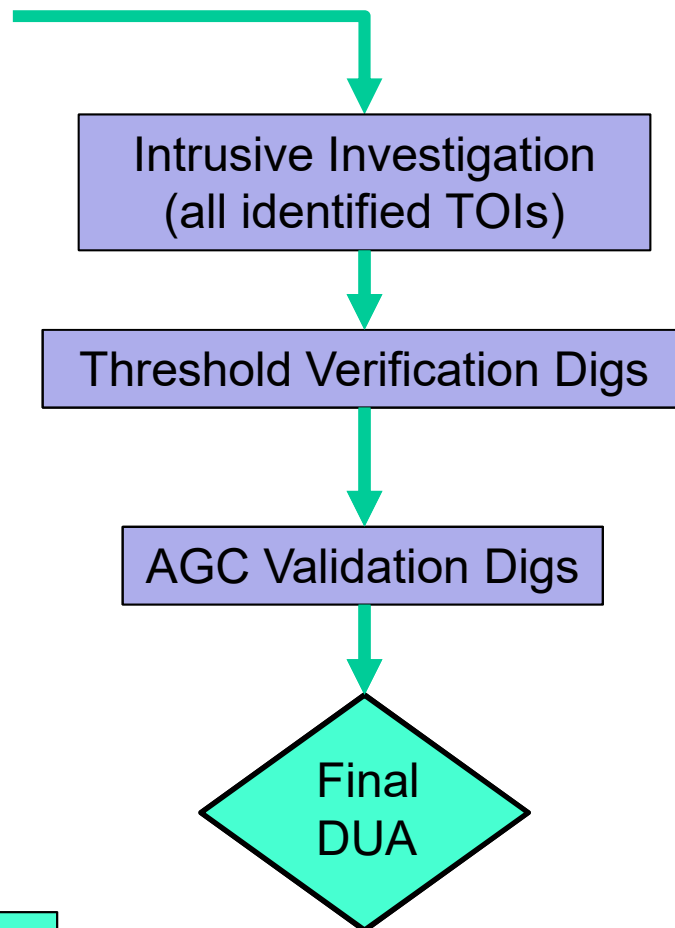


Sequence Step vs. Project Delivery Team Member Engagement	NAVFAC RPM	Base ER Manager	AGC Contractor	Construction Contractor	Quality Assurance Contractor
Static AGC Survey	Light	Light	Heavy	None	Medium
Initial Prioritized List	Light	Light	Heavy	Light	Light
Analyst Calibration Digs	Light	Light	Heavy	None	Medium
Final Prioritized List	Light	Light	Heavy	Heavy	Light
Data Usability Assessment #2	Medium	Medium	Heavy	Light	Light



- Project Delivery Team for Part 2
 - Involves continued interactions between team
 - Assumes analyst calibration digs by AGC Contractor
 - Construction Contractor MEC QAPP prepared around the final prioritized list/data usability assessment #2 step
 - Endorsement of Data Usability Assessment #2 required to move on to next step
 - NAVFAC RPM, Base ER Manager, QA Contractor, and Stakeholders

Breakdown of AGC Process: Part 3

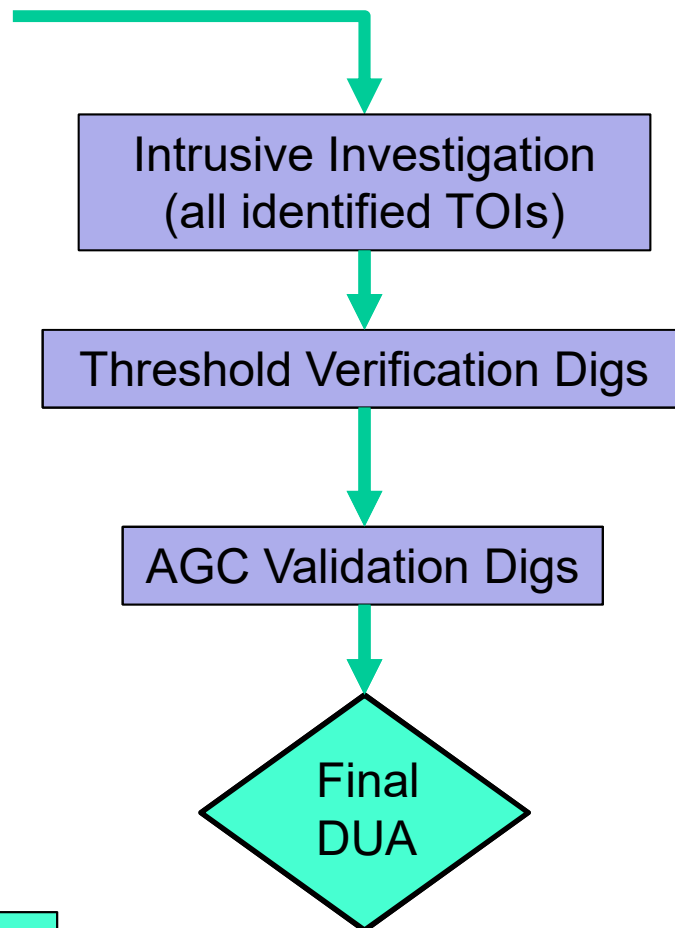


- Intrusive Investigation
 - Continuous communication and data transfer between AGC Contractor and Construction Contractor required
 - Qualitative evaluation of what was recovered versus predicted
 - Results provide continuing validation of AGC process
- Threshold Verification Digs
 - Additional 200 digs in sequence from sources identified as “no dig”
 - Used to verify dig/no dig cutoff threshold determined in Part 1
 - Presents scoping challenge with changing dig/no dig threshold while in field

Desktop/
Reporting

Fieldwork

Breakdown of AGC Process: Part 3



- AGC Validation Digs
 - Additional 200 digs from random sources identified as “no dig”
 - Used to validate AGC process properly predicts characteristics (size, shape, wall thickness)
- Final Data Usability Assessment
 - Evaluates whether underlying assumptions are supported and if results can be used as intended
 - Vertical CSM used to support end evaluation
 - Determines level of confidence
 - Addresses limitations to the usability of the data

Desktop/
Reporting

Fieldwork

Breakdown of AGC Process: Part 3



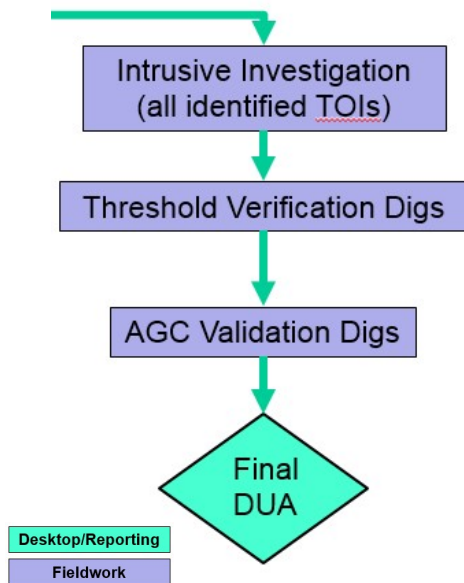
RPM Takeaways

- AGC process presents unique scoping challenges due to continued refinement and shift of dig/no dig threshold while in the field; especially problematic with FFP contracts
- Review of intrusive investigation results should occur lockstep with the intrusive investigation process
- Expect some lag time with field data transfer from Construction Contractor to AGC Contractor, AND with AGC evaluation results from AGC Contractor to Construction Contractor; potential impact to schedule and demobilization
- Potential for re-investigation of anomalies where the recovered item does not match the predicted item
- Validation digs need to be done after the verification step is complete to ensure a true random validation of AGC process
- Final Data Usability Assessment is the end of the AGC process; however, construction closeout and after action reports are still required for contract and ESS closeout.

Breakdown of AGC Process: Part 3



Sequence Step vs. Project Delivery Team Member Engagement	NAVFAC RPM	Base ER Manager	AGC Contractor	Construction Contractor	Quality Assurance Contractor
Intrusive Investigation (all identified TOIs)	Medium	Medium	Heavy	Heavy	Medium
Threshold Verification Digs	Light	Light	Heavy	Heavy	Medium
AGC Validation Digs	Light	Light	None	Light	Heavy
Final Data Usability Assessment	Heavy	Heavy	Heavy	Light	Heavy



- Project Delivery Team for Part 3
 - Involves continued interactions between all team members
 - Assumes threshold verification digs by Construction Contractor
 - Assumes AGC validation digs by QA Contractor
 - Endorsement of Final Data Usability Assessment required to document acceptance of results and limitations
 - NAVFAC RPM, Base ER Manager, QA Contractor, and Stakeholders

Knowledge Check



Which order is correct?

- (a) AGC Validation Digs > Threshold Verification Digs > Analyst Calibration Digs
- (b) Threshold Verification Digs > Analyst Calibration Digs > AGC Validation Digs
- (c) Analyst Calibration Digs > Threshold Verification Digs > AGC Validation Digs
- (d) Analyst Calibration Digs > AGC Validation Digs > Threshold Verification Digs

Answer: C! Analyst Calibration Digs > Threshold Verification Digs > AGC Validation Digs

Calibration Digs: ~50-100 digs to refine the site-specific library and determine dig/no-dig cutoff

Verification Digs: 200 digs in sequence to verify dig/no-dig cutoff

Validation Digs: 200 digs from random sources used to validate the AGC process

Summary



- AGC projects require unique scope and contractual considerations.
- Entire project delivery team should be involved from start to finish.
- AGC requires greater attention to detail than conventional DGM.
- AGC requires greater communication among the project delivery team, and enhanced interaction between the AGC Contractor and the Construction Contractor.
- AGC process has built in iterative revision and refinement steps.
- Although there are ways to optimize and streamline the process by combining steps, it is critical to keep the calibration, verification, and validation steps in order.
- Consider cost and time impact for required AGC documentation and data evaluation process; ~20-30% lower production rate than conventional intrusive investigation.

Contacts and Questions



Points of Contact

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Questions ?

Resources/Helpful Links



- ITRC Geophysical Classification for Munitions Response, August 2015

<http://itrcweb.org/gcmr-2/#Welcome.htm%3FTocPath%3D1>

- AGC QAPP template

<https://www.epa.gov/fedfac/uniform-federal-policy-quality-assurance-project-plans-template-advanced-geophysical>

- NAVFAC MR Quality Assessment Spreadsheet, August 2017

https://www.navfac.navy.mil/navfac_worldwide/specialty_centers/exwc/products_and_services/ev/erb/mr-sites.html